

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OKLAHOMA**

JIMMY DALE PALMER, et al.,)	
)	
)	Case No: 03-CV-0498-CVE-PJC
Plaintiffs,)	
)	
v.)	
)	Consolidated with:
ASARCO INCORPORATED, et al.)	
)	Case No: 03-CV-0565-CVE-PJC
)	Case No: 03-CV-0566-CVE-PJC
Defendants/Third-party Plaintiffs,)	Case No: 03-CV-0567-CVE-PJC
)	Case No: 03-CV-0569-CVE-PJC
)	
v.)	
)	
UNITED STATES OF AMERICA, et al.)	
)	
)	
Third-Party Defendants.)	

OPINION AND ORDER

Now before the Court are Defendants’ Motion to Exclude the Expert Testimony of Bonnie [sic] F. Forrest, J.D., Ph.D. (Dkt. # 532), and Defendants’ Motion to Exclude the Expert Testimony of Jeanette Wasserstein (Dkt. # 521). Plaintiffs have filed a joint response to both motions.

I.

The plaintiffs in this case are seven minor children who claim that they were injured because they were exposed to low levels of lead over an extended period of time. Plaintiffs assert that lead exposure resulted when defendants, mining companies that operated in an area of northeastern Oklahoma now designated as the Tar Creek Superfund Site, left piles of mining waste on the surface for decades, and the mining waste was blown by wind to plaintiffs’ residences in the nearby towns of Picher and Cardin, Oklahoma. Plaintiffs have been tested for lead in their blood, and test results

have shown that each plaintiff has some amount of lead in his or her blood. The blood lead levels at issue in this case are relatively low, but plaintiffs argue that there is no known safe blood lead level.

Plaintiffs have been examined by neuropsychologists in connection with this litigation, and plaintiffs allege that their injuries include behavioral disorders, learning disabilities and IQ loss. Defendants have moved to exclude the testimony of plaintiffs' neuropsychology experts, Bonny J. Forrest, J.D., Ph.D. ("Dr. Forrest"), and Jeanette Wasserstein, Ph.D. ("Dr. Wasserstein"). Dr. Wasserstein and Dr. Forrest are both psychologists who examined some of the plaintiffs. Dr. Wasserstein examined S.N. and J.P., and Dr. Forrest examined J.B.S., Z.S., B.H., T.S., and M.H. Dr. Forrest has a Juris Doctor from the Indiana University School of Law and a doctorate in psychology from Columbia University. She received a postdoctoral research fellowship from the National Institute of Health ("NIH") in 2001, and she has served as a special guest researcher at the NIH since April 2003. She has taught classes and seminars at Columbia University, and she worked at Yale University as a neuropsychology fellow. Dr. Wasserstein received a Ph.D. in cognitive neuropsychology from the City University of New York and conducted two years of post-doctoral studies at Yale University. She currently serves as an adjunct faculty member at the City University of New York and as an assistant clinical professor at The Mount Sinai School of Medicine. Defendants do not challenge either Dr. Forrest's or Dr. Wasserstein's qualifications to provide expert testimony in the area of neuropsychology.

Dr. Forrest and Dr. Wasserstein prepared a separate report for each plaintiff examined, but each neuropsychologist used a similar procedure to reach their opinions. Dr. Wasserstein reviewed medical and educational records, interviewed each child's parents, and performed a battery of

behavioral, academic, and neuropsychological testing. Dr. Forrest used the same procedures, except that she also provided the child's teacher with assessment forms and interviewed school personnel. The battery of testing included the Wechsler Intelligence Scale for Children - III, selected subsets of the Woodcock-Johnson III Tests of Achievement, the Children's Memory Scale, the Behavioral Assessment Scales for Children, Conner's Parent and Teacher Rating Scale, and a range of other tests.

After reviewing the test results, Dr. Forrest and Dr. Wasserstein found that each plaintiff suffered from some type of neurocognitive deficiency. For example, Dr. Forrest noted that B.H.'s test results showed "(1) expressive language difficulties, 2) attention deficit hyperactivity disorder-inattentive type, and 3) abstract reasoning and executive function deficits." Dkt. # 535, Ex. C, at 11. She also found that B.H. had "documented difficulties with reading and motor skills." *Id.* Dr. Forrest stated that these findings are consistent with low-level lead exposure, and it was her opinion that "[B.H.'s] neuropsychological deficits are, to a reasonable degree of neuropsychological certainty, the result of low-level lead toxicity." *Id.* at 12. Dr. Wasserstein included similar findings in expert reports. In her report for J.B.S., she found that he had a relatively low IQ, weak verbal skills, and difficulties at school, in part, caused by attention deficit hyperactivity disorder ("ADHD"). She intends to testify at trial that

[J.B.S.'s] long term prognosis is uncertain. His ability to learn has historically fluctuated and his language semantic system is very weak, despite adequate overall understanding. Consequently, as he advances in the educational system he is likely to find lecture and reading comprehension increasingly difficult, in part because of his language vulnerabilities and in part because of his working memory/attention difficulties. It is exceedingly unlikely that [J.B.S.] will be able to go to college and/or study medicine, which he aspires to. He may even have difficulty finishing high school, as is the case for many lead exposed children.

Dkt. # 524, Ex. C, at 13.

Both Dr. Forrest and Dr. Wasserstein intend to testify that lead was the specific cause of plaintiffs' alleged injuries. At the Daubert hearing, plaintiffs stated that they did not intend to offer either Dr. Forrest's or Dr. Wasserstein's testimony to prove specific causation. The parties have filed a joint stipulation memorializing their agreement, which states:

Plaintiffs hereby stipulate that they will not offer or sponsor at the trial of any claim of any of the seven plaintiffs in this case any testimony or opinions from Dr. Jeanette Wasserstein and/or Dr. Bonny Forrest that in any way addresses the issue of the specific causation of any alleged injury suffered by any plaintiff in these pending cases, thus precluding testimony or opinions from them including, but not limited to, whether or to what extent plaintiffs have suffered any injury as a result of exposure to lead from any source whatsoever.

Dkt. # 693, at 1. Based on this stipulation, defendants' motions to exclude the Dr. Forrest and Dr. Wasserstein are moot as to specific causation, because plaintiffs agreed not to offer the testimony of either neuropsychologist on that issue. However, the Court took defendants' motions under advisement on the issues of injury-in-fact and general causation.

Plaintiffs' response shares a common problem with regard to both Dr. Forrest and Dr. Wasserstein, and the Court must preliminarily address this issue before turning to defendants' substantive arguments. In their response, plaintiffs cite 17 studies that allegedly support their experts' opinions. Dkt. # 571, at 12-14. However, neither Dr. Forrest nor Dr. Wasserstein cited most of these studies in their expert reports and defendants object to plaintiffs' attempt to use these studies to show that Dr. Forrest and Dr. Wasserstein have a reliable basis for their proposed expert testimony. After reviewing plaintiffs' response and comparing it to the expert reports, the Court has

found that Dr. Wasserstein and Dr. Forrest each cited 3 of the 17 studies.¹ Defendants have a legitimate complaint about the other thirteen studies, because there is no indication that defendants were on notice that Dr. Forrest or Dr. Wasserstein would use these studies to support their opinions. See Fed. R. Civ. P. 26(a)(2); Hollander v. Sandoz Pharmaceuticals Corp., 289 F.3d 1193, 1215 (10th Cir. 2002) (district court properly ignored studies not cited by the plaintiffs' experts when ruling on a Daubert motion). Plaintiffs have not requested leave of court to supplement their expert disclosures and, under Hollander, the Court certainly has the authority to prevent plaintiffs' experts from using previously undisclosed studies, even if the expert is allowed to testify. Therefore, the Court will not refer to these thirteen previously undisclosed studies when ruling on defendants' motions to exclude Dr. Forrest and Dr. Wasserstein.

II.

In Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993), the Supreme Court held that district courts must initially assess the admissibility of expert testimony under Fed. R. Evid. 702. In Bitler v. A.O. Smith Corp., 400 F.3d 1227 (10th Cir. 2005), the Tenth Circuit discussed the role of district courts when considering a Daubert challenge. First, the court should make a preliminary finding that the expert is qualified to testify. Next, the proponent of expert testimony must establish that the expert used reliable methods to reach his conclusion and that the expert's

¹ Both Dr. Forrest and Dr. Wasserstein cite the following two studies: (1) B.P. Lanphear et al., *Cognitive Deficits Associated with Blood Lead Concentrations <10 micro/dL in U.S. Children and Adolescents*, 115 Public Health Rep. 521 (2000); and (2) J. Schwartz, *Low-Level Lead Exposure and Children's IQ: a Meta-analysis and Search for a Threshold*, 65 Environ. Res., 42 (1994). In addition, Dr. Forrest cites D. Bellinger et. al, *Low-Level Lead Exposure and Cognitive Function in Children*, 23 Pediatric Annals 600 (1994), and Dr. Wasserstein cites R. Canfield et al., *Intellectual Impairment in Children with Blood Lead Concentrations Below 10 ug per deciliter*, 348 New Eng. J. Med. 1517 (2003).

opinion is based on a reliable factual basis. The Tenth Circuit cited four factors that district courts should apply to make a reliability determination:

(1) whether a theory has been or can be tested or falsified; (2) whether the theory or technique has been subject to peer review and publication; (3) whether there are known or potential rates of error with regard to specific techniques; and (4) whether the theory or approach has “general acceptance.”

Id. at 1233 (citing Daubert, 509 U.S. at 593-94). The Tenth Circuit was clear that “a trial court’s focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions.” Id. In other cases, the Tenth Circuit has emphasized that any analytical gap in an expert’s methodology can be a sufficient basis to exclude expert testimony under Daubert. Trucks Ins. Exchange v. MagneTek, Inc., 360 F.3d 1206, 1212-13 (10th Cir. 2004); Goebel v. Denver & Rio Grande Western R. Co., 346 F.3d 987, 992 (10th Cir. 2003). Under Daubert, “‘any step that renders the analysis unreliable . . . renders the expert’s testimony inadmissible. This is true whether the step completely changes a reliable methodology or merely misapplies that methodology.’” Mitchell v. Gencorp Inc., 165 F.3d 778, 783 (10th Cir. 1999) (citing In re Paoli R.R. Yard PCB Litigation, 35 F.3d 717, 745 (3d Cir. 1994)).

III.

Defendants ask the Court to exclude Dr. Forrest’s testimony in its entirety. Defendants raise four specific arguments: (1) Dr. Forrest can not establish with a reasonable certainty that plaintiffs have suffered an injury; (2) she lacks a reliable basis to conclude that plaintiffs were exposed to lead in utero; (3) plaintiffs’ blood lead tests showed that they were exposed to minimal amounts of lead, and Dr. Forrest’s sources do not support her opinion that such minimal exposure to lead could have caused plaintiffs’ symptoms; and (4) Dr. Forrest did not disclose her “constellation of deficits”

theory in her Rule 26 report and, even if she did disclose this opinion, it is unreliable.² Although plaintiffs spend a significant part of their response discussing Dr. Forrest's qualifications, defendants do not argue that Dr. Forrest lacks the necessary experience or education to testify as an expert on neuropsychology, nor is there any reasonable basis to question her qualifications. Defendants challenge Dr. Forrest's methodology, and they argue that her report and deposition testimony show that she lacks a sufficient basis to testify that plaintiffs have suffered an injury, or that lead is capable of causing plaintiffs' alleged injuries.

A.

Defendants' first argument is that plaintiffs can not establish the existence of an injury-in-fact. This argument is based on the somewhat subjective nature of plaintiffs' neurocognitive injuries. Defendants argue that Dr. Forrest lacks a reliable basis to show that plaintiffs' alleged neurocognitive deficits actually constitute an injury, because they claim that low test results, without other evidence, are not enough to prove that plaintiffs have suffered an injury. Defendants state that:

Dr. Forrest cannot pass the threshold requirement of establishing that the alleged deficits she discerned through neuropsychological testing of Plaintiffs are the result of injury rather than simply the normal level of function for these Plaintiffs. In other words, she cannot testify with any degree of scientific certainty that somehow any Plaintiff lost some neurocognitive function that they once had. Failing to establish this, one cannot assume that merely because Plaintiffs purportedly have some neurocognitive problems (some of which rise to the level of deficits and impairments), those problems are the result of low or very low level lead exposure.

² The Court will not address defendants' second argument, because plaintiffs have stipulated that Dr. Forrest will not offer any testimony that plaintiffs were actually exposed to lead. As to defendants' third argument, the Court will consider Dr. Forrest's testimony about injuries cause by low level lead exposure to the extent her testimony relates to general causation.

Dkt. # 532, at 5-6. Defendants' argument has lost a certain amount of force due to the joint stipulation concerning Dr. Forrest's testimony. Plaintiffs state that they will offer Dr. Forrest to discuss her neuropsychological findings, but she will not be asked to testify that plaintiffs' neuropsychological deficits were caused by lead.

While plaintiffs must prove an injury-in-fact to prevail at trial, defendants have not shown that Dr. Forrest lacks a reliable basis to testify about plaintiffs' test results. She considered a wide range of psychological and educational testing for each of the five plaintiffs she examined and, based on this data, she concluded that each plaintiff she examined suffered from a range of neurocognitive impairments. Defendants imply that Dr. Forrest must know what plaintiffs' educational abilities would be without any exposure to lead in order to testify. This is true for certain types of injuries, such as IQ loss because, without preexposure testing, any opinion that plaintiffs have lost IQ points is purely speculative. See Dkt. # 689, at 10. However, Dr. Forrest is careful not to cite IQ loss as an injury, even though she acknowledges that lost IQ points have been associated with lead exposure.³ She limits her assessment of injury to expressive and language difficulties, learning problems, and below average motor skills, and these injuries are sufficiently concrete and verifiable. Dr. Forrest has examined each plaintiff and, based on her experience and training, she should be permitted to testify about her findings for each plaintiff. Defendants can challenge her conclusions through cross-examination, but this is not an appropriate subject for a Daubert challenge.

³ The Court sees no reason why Dr. Forrest may not testify about the results of plaintiffs' IQ testing, because she performed the necessary testing to determine this fact and it could be relevant to other alleged injuries. However, Dr. Forrest may not testify that plaintiffs have lost IQ points due to lead exposure.

B.

Defendants argue that several of the plaintiffs have never been found to have blood lead levels in excess of 10 ug/dL, and Dr. Forrest's opinion that blood lead levels below the CDC's level of concern could have caused an injury is unreliable.⁴ Defendants refer to a blood lead level below 10 ug/dL as a background level of lead, and they attack the scientific research supporting any expert's opinion that such minimal amounts of lead can cause a psychological injury. According to the CDC, in 2000 the mean blood lead level for all children between the ages of 1 and 5 was 2.2 ug/dL, and there is a margin of error of 4 ug/dL for blood lead measurements. Defendants argue that Forrest should not be permitted to testify that lead is capable of causing any injury when such minimal levels of lead are at issue.⁵

Defendants question the reliability of every study and article cited by Dr. Forrest in her report for the proposition that blood lead levels below 10 ug/dL can cause identifiable injuries in young children. In particular, Dr. Forrest relies on a study by M. Ris, cited as M. Ris et al., *Early Exposure to Lead and Neuropsychological Outcome in Adolescence*, 10 Journal of the Int'l Neuropsychological Society 261 (2004), to support her assertion that any exposure to lead can cause neuropsychological deficits in young children. Dkt. # 571, Ex. 1, at 12. Defendants also question

⁴ The highest recorded blood level for three of the plaintiffs is below 10 ug/dL: M.H., B.H., and Z.S. M.H.'s highest blood lead level was 4 ug/dL; B.H.'s highest blood lead level was 2 ug/dL; Z.S.' highest blood lead level was 6 ug/dL.

⁵ This argument could be construed as related to both general and specific causation. The Court will address defendants' argument to the extent that it relates to general causation, because plaintiffs have withdrawn Dr. Forrest's testimony concerning specific causation. Dr. Forrest will not be permitted to testify that these plaintiffs have suffered an injury caused by lead, but plaintiffs still intend to have Dr. Forrest testify about the general types of injuries that can be caused by lead.

Dr. Forrest's reliance on the following articles: Dietrich, *Lead Exposure and the Motor Development Status of Urban Six-Year-Old Children in the Cincinnati Prospective Study*, 91 *Pediatrics* 301 (1993); Dietrich, *Lead Exposure and the Central Auditory Processing Abilities and Cognitive Development of Urban Children: The Cincinnati Lead Study Cohort at Age 5 Years*, 14 *Neurotoxicology and Teratology* 51 (1992); Lanphear, *Cognitive Deficits Associated with Blood Lead Concentrations < 10 ug/dL in US Children and Adolescents*, 115 *Public Health Reports* 521, 527 (2000); and Stiles and Bellinger, *Neuropsychological Correlates of Low-Level Lead Exposure in School-Age Children: A Prospective Study*, 15 *Neurotoxicology and Teratology* 27 (1993). In essence, defendants are asking the Court to review the articles cited by Dr. Forrest and find that they do not support her opinions.⁶ Plaintiffs do not address this argument in their response.

Although defendants suggest that their argument goes to the applicability of the studies, many of the issues raised by defendants go to the validity of the studies themselves. As part of its gatekeeper function, the Court should consider the applicability of studies cited by an expert witness. Knight v. Kirby Inland Marine Inc., 482 F.3d 347, 355 (5th Cir. 2007); Amorgianos v. Nat'l R.R. Passenger Corp., 303 F.3d 256, 269 (2d Cir. 2002). The issue is not whether defendants or the Court question the scientific validity of the articles cited by Dr. Forrest. See General Electric Co. v. Joyner, 522 U.S. 136 144-45 (1997). Instead, the Court must use the Daubert factors to determine whether she has "employ[ed] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." Bitler, 400 F.3d at 1232 (quoting Kumho Tire Co.

⁶ Defendants have provided copies of the Ris and Lanphear articles only, but they summarize the other articles cited in their motion. Dkt. # 521, Ex. M (Ris); Dkt. # 623, Ex. M (Lanphear). Therefore, the Court will consider the applicability of the Ris and Lanphear articles only in this Opinion and Order.

v. Carmichael, 526 U.S. 137, 152 (1999)). If experts in the field would rely on the studies cited by Dr. Forrest to support an association between the types of injuries noted and low level exposure to lead, Dr. Forrest should be permitted to testify about general causation.⁷

Concerning the Ris and Lanphear articles, defendants argue that at least 80% of the children in the Ris study had a blood lead level of 15 ug/dL or higher and all of the children had a blood lead level in excess of 10 ug/dL, whereas at least three of the plaintiffs in this case have not ever tested over 10 ug/dL. Defendants also argue that Ris acknowledges that other factors aside from lead could be a factor in neuropsychological deficits, but those factors could not be measured by his study. See Ris, *supra*, at 268 (“small effects across large numbers of children can have far reaching implications that cannot be appreciated at the level of the individual”). While Ris notes that it may not be possible in every case to determine if lead causes minor neuropsychological deficits, his article does support the proposition that lead in small amounts has a harmful effect on children. This does not necessarily make his study inapplicable to the present case, because Dr. Forrest can use this study to support her opinions about the types of injuries generally caused by lead exposure. Concerning Lanphear’s study, defendants cite another article criticizing Lanphear’s methods because he failed to rule out factors such as maternal intelligence when finding an association between lead and neuropsychological deficits. Dkt. # 532, at 17 (citing Stone, *Can the National Health and Nutrition Examination Survey III (NHANES III) Data Help Resolve the Controversy Over Low Blood Lead Levels and Neuropsychological Development in Children*, 18 Arch. Clin.

⁷ Defendants’ argument had significantly more force when applied to specific causation rather than general causation. Given that Dr. Forrest will not testify about specific causation as to any particular plaintiff, defendants’ factual distinctions between plaintiffs’ blood lead levels and the specifics of the studies cited by Dr. Forrest are much less of a factor in the Court’s reliability determination under Daubert.

Neuropsychol. 219 (2004). The Court will not infer that Lanphear's study is inherently unreliable simply because another expert criticized his methodology or his conclusions. The scholarly process invites debate about new research and, without more, the fact that one scientist disagrees with another does not provide a basis for the Court to disregard an expert witness' reliance on a study.

Defendants have shown that there is room for debate within the relevant scientific community, but the articles cited by plaintiffs suggest that many experts believe that very low levels of lead are frequently associated with learning problems and behavioral disorders. The role of the Court when ruling on a Daubert motion is not to resolve the scientific debate, but to determine whether plaintiffs' experts have a reliable basis for their testimony. Defendants' disagreement with the methodology employed in the studies does not show that Dr. Forrest's testimony as to general causation will be unreliable, but that there is room for a difference of opinion within the underlying scientific community. This can be brought out on cross-examination but, if experts in the field would rely on these articles and the theories involved are generally accepted, defendants have not shown that Dr. Forrest's testimony is wholly unreliable. Dr. Forrest may testify about the types of injuries generally caused by lead unless otherwise ordered by the Court.

C.

Defendants' final argument is that Dr. Forrest failed to disclose her "constellation of deficits" theory in her Rule 26 report or, in the alternative, that she lacks a reliable basis to testify about this theory. At her deposition, Dr. Forrest testified that a "constellation" of subtle neuropsychological deficits were present in all five children she examined, and this caused her to believe that exposure to lead was responsible for plaintiffs' injuries. She opined that children normally have some of the same symptoms as plaintiffs in isolation, but that "[t]his profile and this constellation have been tied

in the scientific literature to low level and upper level lead exposures.” Dkt. # 533, Ex. A, at 51. Defendants argue that no scientific studies or peer-reviewed literature support Dr. Forrest’s testimony that low level lead exposure generally causes a signature grouping of injuries, and this testimony should be excluded. To a limited extent, this argument addresses Dr. Forrest’s testimony on the issue of general causation, and the Court will consider defendants’ argument in this limited context. As the parties have stipulated, Dr. Forrest will not be permitted to testify that lead caused any injuries to the plaintiffs in this case.

The Federal Rules of Civil Procedure require an expert witness to prepare a report “containing a complete statement of all opinions to be expressed.” Fed. R. Civ. P. 26(a)(2)(B). A party’s failure to disclose the identity of an expert witness or provide an expert report requires the Court to automatically exclude expert testimony unless the violation of Rule 26(a)(2) was justified or was harmless under the circumstances. Fed. R. Civ. P. 37(c)(1); Woodworker’s Supply, Inc., v. Principal Mut. Life Ins. Co., 170 F.3d 985, 992-93 (10th Cir. 1999). Under Rule 26(a)(2), courts may exclude specific opinions that were not fairly disclosed in the expert’s report. Keach v. United States Trust Co., 419 F.3d 626, 641 (7th Cir. 2005). The Tenth Circuit has identified four factors to determine whether a violation of Rule 26(a)(2) was harmless or justified: (1) the prejudice or surprise to the party against whom the testimony is offered; (2) the ability of the party to cure the prejudice; (3) the extent to which introducing such testimony would disrupt the trial; and (4) the moving party’s bad faith or willfulness. Woodworkers’ Supply, Inc., 170 F.3d at 993.

In this case, defendants were on notice that Dr. Forrest would testify that lead exposure causes a range of neuropsychological injuries, even if she did not use the language “constellation of deficits” in her expert reports. Her reports contain a detailed analysis of the general types of

neurological symptoms associated with lead exposure, and defendants are construing the specific phrasing Dr. Forrest used in her deposition too narrowly. Dr. Forrest's deposition testimony simply suggests that existing literature has identified a range of symptoms indicative of low level lead exposure, but she did not identify a specific category of injuries that are always present in lead exposure cases. Defendants' argument is based on a misinterpretation of Dr. Forrest's deposition testimony, and defendants' fear that she will testify about a "constellation of deficits" is largely based on language adopted by defense counsel during Dr. Forrest's deposition. It does not appear that Dr. Forrest intends to testify about a "constellation of deficits," and this basis for exclusion of Dr. Forrest's testimony concerning general causation is denied.

IV.

The Court will now turn to defendants' motion to exclude the expert testimony of Dr. Wasserstein. Defendants raise three general arguments to exclude Dr. Wasserstein under Daubert: (1) she does not have a reliable basis to opine that plaintiffs suffered an injury; (2) her opinion on general causation lacks adequate support in the scientific literature; and (3) Dr. Wasserstein should not be permitted to testify about specific causation because she lacks an evidentiary basis to conclude that S.N. or J.B.S. were exposed to enough lead to cause their alleged injuries.⁸ Dr. Wasserstein examined S.N. and J.B.S. S.N.'s highest measured blood lead level was 2 ug/dL, and this makes any assertion of injury based on lead exposure very questionable. J.B.S.'s highest measured blood lead level was 14 ug/dL, and this does exceed the CDC's minimum level of concern. For both children, she concludes with "reasonable scientific probability" that early childhood

⁸ Based on the parties' joint stipulation, plaintiffs agree that they will not offer Dr. Wasserstein to testify that any plaintiff was injured due to lead exposure, and defendants' motion to exclude Dr. Wasserstein is moot on the issue of specific causation.

exposure to lead caused significant intellectual damage. Plaintiffs argue that defendants' arguments go to the weight, not the admissibility, of Dr. Wasserstein's testimony. Plaintiffs are mistaken, and defendants' arguments merit closer consideration than plaintiffs suggest.

A.

Defendants argue that Dr. Wasserstein does not have a reliable basis to testify that J.B.S. or S.N. has suffered an injury, even if they allegedly have some neurocognitive problems or deficits, and Dr. Wasserstein's testimony should be excluded. Defendants claim that Dr. Wasserstein has no basis to know what J.B.S.' or S.N.'s normal level of intellectual functioning would have been without exposure to lead, and there is no way to determine whether an injury occurred.⁹ This argument is highly fact-intensive and, even though Dr. Wasserstein will not testify about specific causation, each plaintiffs' background and Dr. Wasserstein's findings should be considered to determine if she has a reliable basis to testify that J.B.S. or S.N. have been injured.

S.N. is currently 16 years old and was 13 years old at the time Dr. Wasserstein examined him. Dr. Wasserstein reports that S.N. has disliked school since preschool, and he was initially placed in special education classes. He was returned to mainstream classes during the 3rd grade. He has suffered from ulcers since he was 8 years old, and Dr. Wasserstein attributes the ulcers to emotional stress from attending school. As part of the examination of S.N., she administered an IQ test and found that S.N.'s IQ was 70. This falls within the low-normal to borderline mentally

⁹ Dr. Wasserstein acknowledges that she has no basis to opine that plaintiffs have lost IQ points. In her deposition, she stated that "I try not testify with anyone that they've lost IQ points especially when you haven't had them in the first place to lose, it's hard to say. I'm just going to testify that he has neuropsychological deficits that are consistent with his having had excessive lead burden for long time during critical periods of neuro development." Dkt. # 524, Ex. A, at 218.

retarded range. Defendants point out that S.N. has 3.0 grade point average as a freshman in high school, but Dr. Wasserstein maintains that S.N. will hit an educational wall at some point in the future. She believes he will most likely not go to college or even graduate from high school. J.B.S. is 15 years old, and was 12 at the time Dr. Wasserstein examined him. As a child, he was slow to develop language skills, but hearing loss may have contributed to this problem. His mother claims that J.B.S. has had learning problems since he started school. J.B.S.' IQ is 83, which falls in the low-average range. Dr. Wasserstein implies that J.B.S. suffers from dyslexia, but this has never been diagnosed. Dr. Wasserstein believes it is clear that J.B.S.' language skills are below average, but Dr. Wasserstein finds that his grades in school are generally good. Dr. Wasserstein believes that "[i]t is exceedingly unlikely that [J.B.S.] will be able to go to college and/or study medicine, which he aspires to. He may even have difficulty finishing high school, as is the case for many lead exposed children." Dkt. # 524, Ex. C, at 13. Dr. Wasserstein's long term prognosis for both children assumes that the educational performance will decrease over time.

Defendants claim that Dr. Wasserstein has not shown that she has a reliable basis to construe her findings as evidence that plaintiffs have suffered an injury. Dr. Wasserstein is a qualified neuropsychologist and she personally conducted a wide range of testing for the two plaintiffs she examined. Although she mentions that S.N. and J.B.S. have below average IQs, she does not opine that plaintiffs lost IQ points because of exposure to lead. She is qualified to interpret test results and testify about specific neuropsychological deficits shown by the testing. Defendants are free to cross-examine Dr. Wasserstein about plaintiffs' neurological conditions and how these constitute an

injury.¹⁰ Factors such as parental intelligence, genetics, and environment are relevant but, even considering these factors, plaintiffs could still have an injury even if something other than lead caused the injury. Dr. Wasserstein examined J.B.S. and S.N. and, based on her expertise and training, she has a sufficient basis to opine testify about plaintiffs' test results and whether she believes plaintiffs have some type of neuropsychological deficit.

B.

Defendants argue that lead exposure can not cause some of the injuries cited by Dr. Wasserstein, and she lacks a reliable basis to testify about general causation. General causation is not normally a basis to exclude an expert's testimony unless the expert intends to testify about a previously unrecognized theory of causation or injury. Ingram v. Solkatronic Chemical, Inc., 2005 WL 3544244, at *3 (N.D. Okla. Dec. 28, 2005). Defendants' theory is that certain types of injuries, such as attention deficit disorders, have not been linked to lead exposure in any existing studies, and Dr. Wasserstein intends to offer novel scientific testimony on the issue of general causation. Courts have excluded experts on this basis in other cases. Ruggiero v. Warner-Lambert Co., 424 F.3d 249, 255 (2d Cir. 2005) (district court properly excluded expert testimony that a drug caused plaintiff any injury, because no studies or published articles supported this theory of general causation); Farris v. Intel Corp., --- F. Supp. 2d ---, 2007 WL 1932131, at *6-7 (D.N.M. March 14, 2007) (excluding expert testimony that inhalation of ammonium hydroxide causes rhinitis, sinusitis, and vertigo when this opinion was supported by statement of expert only); Wynacht v. Bechman Instruments, Inc., 113

¹⁰ Dr. Wasserstein admits that it is difficult to conclude that an alleged loss of 1 to 3 IQ points is an injury. *Id.*, Ex. A, at 217-18. However, she is prepared to testify that IQ points are linked to lead exposure on a community level, and that plaintiffs in this case exhibit a lower IQ. *Id.*

F. Supp. 2d 1205, 1209 (E.D. Tenn. 2000) (expert excluded when no published studies or generally accepted scientific principles supported expert's theory of general causation).

Defendants argue that Dr. Wasserstein did not give adequate consideration to any cause other than exposure to lead that could generally have caused plaintiffs' neuropsychological impairments. Plaintiffs respond that blood lead levels below 10 ug/dL are known to cause neurocognitive injuries, and they state that she should be permitted to testify about all of the alleged injuries noted in her report. Dr. Wasserstein's reports for S.N. and J.B.S. cite numerous studies and articles, and contain sufficient indicia of reliability for her opinions that lead is a known cause of or increases the risk for the conditions noted in her report. While the literature may be equivocal about the prevalence of specific types of problems, Dr. Wasserstein has a reliable basis to discuss the known association between lead and certain neurocognitive impairments.¹¹ Defendants can elicit through cross-examination that causes other than exposure to lead could have caused the same impairments. Dr. Wasserstein can offer testimony as to the known effects of low level lead exposure but, based on the parties' joint stipulation, she may not testify that plaintiffs' alleged neuropsychological deficits were caused by lead.

Defendants argue that Dr. Wasserstein's opinion as to general causation is unreliable to the extent that she finds lead exposure can generally cause ADHD. Dr. Wasserstein found that test results indicated that S.N. should be diagnosed as having ADHD, but she does not identify any scientific literature showing that lead exposure can cause ADHD. This is a novel scientific theory and there does not appear to be any support in the scientific literature for Dr. Wasserstein's claim

¹¹ Of course, Dr. Wasserstein must confine her testimony to impairments that are generally caused by lead, because the parties have stipulated that she will not offer any testimony that lead specifically caused an injury to S.N. or J.B.S.

that lead exposure is a recognized cause of ADHD. See Vargas v. Lee, 317 F.3d 498, 502 (5th Cir. 2003) (excluding expert medical testimony that trauma was capable of causing fibromyalgia because the science supporting this assertion was unreliable); Hollander, 289 F.3d at 1193 (district court properly excluded expert testimony as to general causation when no reliable scientific evidence supported plaintiff's theory of general causation). Defendants cite a 2002 study published the CDC finding that "[a]t present, there is no compelling evidence that an [elevated blood lead level] increases a child's risk for attention deficit hyperactivity disorder." David Bellinger and Leonard Rappaport, *Managing Elevated Blood Lead Levels Among Young Children*, Ch. 5, at 81 (2002). During her deposition, Dr. Wasserstein could not state with any certainty how closely lead exposure and ADHD were related, but she stated she has published a book discussing this link. Dkt. # 524, Ex. A, at 157-59. Even if Dr. Wasserstein believes this link exists, without scientific support and research cited in her expert report and deposition this opinion is classic ipse dixit, and any testimony that lead exposure caused ADHD will be excluded.¹²

IT IS THEREFORE ORDERED that Defendants' Motion to Exclude the Expert Testimony of Bonnie [sic] F. Forrest, J.D., Ph.D. (Dkt. # 532), and Defendants' Motion to Exclude the Expert Testimony of Jeanette Wasserstein (Dkt. # 521) are **granted in part** and **denied in part**. Both Dr. Forrest and Dr. Wasserstein may testify about the results of their examination of each plaintiff, and they may also testify generally about the types of injuries associated with low level

¹² Defendants also ask the Court to exclude Dr. Wasserstein's testimony that lead exposure caused "learning disabilities," because the term "learning disabilities" is not sufficiently described in her report. Dr. Wasserstein's report sets out in sufficient detail the specific neuropsychological deficits that she noted in plaintiffs. When she testifies at trial, she should avoid general terms, such as "learning disabilities," and she should discuss the specific impairment identified in her report.

lead exposure. However, neither Dr. Forrest nor Dr. Wasserstein may testify that lead is known to cause ADHD. Most importantly, Dr. Forrest and Dr. Wasserstein may not opine, directly or indirectly, that any plaintiff has suffered an injury from exposure to lead.

DATED this 13th day of August, 2007.



CLAIRE V. EAGAN, CHIEF JUDGE
UNITED STATES DISTRICT COURT